

Amendments to the Claims

Please amend the claims as indicated.

1. (Currently Amended) A client apparatus for data access on a storage device connected to a storage area network, the apparatus comprising:

a first network interface configured to allow the apparatus to communicate with a storage server;

a second network interface configured to allow the apparatus to communicate with a storage device on a storage area network;

a storage management client configured to communicate with the storage server and coordinate use of the storage device; and

a metadata management module configured to minimize metadata processing on the apparatus by communicating ~~at least a portion of the~~ metadata to the storage server to be exclusively stored in a centralized metadata database on the storage server, the metadata associated with file data corresponding to a client[.]; and

a storage agent configured to communicate a volume attribute request to the storage server, receive the metadata from the centralized metadata database of the storage server, access the file data with the metadata, and send updated metadata to the storage server.

2. (Original) The apparatus of claim 1, further comprising a volume management module configured to request exclusive access to a volume.

3. (Original) The apparatus of claim 2, wherein the volume management module is further configured to request priority access to the volume.

4. (Original) The apparatus of claim 2, wherein the volume management module is further configured to terminate the data access on the storage device in response to a preemption notification from the storage server.

5. (Original) The apparatus of claim 2, wherein the volume management module is further configured to send a volume termination notification to notify the storage server in response to a completed data access operation.

6. (Original) The apparatus of claim 1, wherein the metadata comprises one of a file data characteristic, a device characteristic, a media characteristic, a positioning indicator, and an append position indicator.

7. (Original) The apparatus of claim 1, further comprising a write module configured to write the file data to a storage device.

8. (Original) The apparatus of claim 1, further comprising a read module configured to read the file data from the storage device.

9. (Original) The apparatus of claim 1, further comprising a failover module configured to communicate the file data to the storage server in response to a data access failure.

10. (Currently Amended) A server apparatus for data access management on a storage device connected to a storage area network, the apparatus comprising:

a first network interface configured to allow the apparatus to communicate with a storage agent;

a centralized metadata database configured to exclusively store ~~at least a portion of~~ metadata from the storage agent, the metadata associated with file data and received by the storage agent from a client via a data access request; and

a storage manager configured to manage a data access by the storage agent to a storage device, wherein the storage manager receives a volume attribute request from the storage agent, communicates the metadata from the centralized metadata database to the storage agent, and receives updated metadata from the storage agent.

11. (Original) The apparatus of claim 10, wherein the storage manager is further configured to manage the data access by the storage agent to a volume in response to a volume access request from the storage agent.

12. (Original) The apparatus of claim 10, further comprising a second network interface configured to allow the apparatus to communicate with the storage device on the storage area network.

13. (Original) The apparatus of claim 10, wherein the storage manager is further configured to preempt use of a volume by a non-priority storage agent in response to the volume access request from a priority storage agent.

14. (Currently Amended) The apparatus of claim 10, wherein the storage manager is further configured to update the centralized metadata database with the updated~~new~~ metadata in response to receiving the updated~~new~~ metadata from the storage agent.

15. (Currently Amended) A system for data access management on a storage device connected to a storage area network, the system comprising:

a first network configured to communicate network data;

a second network configured to communicate file data between a node and a storage device;

a storage server connected to the first network, the storage server having a storage manager and a centralized metadata database, the storage server configured to manage a data access to the storage device; and

a client computer connected to the first and second networks, the client computer having a storage management client, ~~and~~ a metadata management module, and a storage agent, the storage management client configured to communicate with the storage server and coordinate use of

the storage device, ~~and~~ the metadata management module configured to minimize metadata processing on the client computer by communicating ~~at least a portion of the~~ metadata to the storage server to be exclusively stored in the centralized metadata database, the metadata associated with the file data, and the storage agent configured to communicate a volume attribute request to the storage server, receive the metadata from the centralized metadata database of the storage server, access the file data with the metadata, and send updated metadata to the storage server.

16. (Original) The system of claim 15, wherein the client computer further comprises a volume management module configured to request exclusive access to a volume.

17. (Original) The system of claim 15, wherein the client computer further comprises a failover module configured to communicate the file data to the storage server in response to a data access failure.

18. (Currently Amended) The system of claim 15, wherein ~~the client computer is further configured to communicate new metadata to the storage server in response to a data access operation, and~~ the storage server is further configured to update the centralized metadata database with the updated~~new~~ metadata in response to receiving the updated~~new~~ metadata from the storage agent.

19. (Currently Amended) A computer readable storage medium comprising computer readable code configured to carry out a method for data access management on a storage device connected to a storage area network, the method comprising:

receiving a data access request from a client, the data access request including metadata associated with file data corresponding to [[a]]the client;

communicating a volume attribute request to a storage server;

receiving the metadata from a centralized metadata database of the storage server;

processing ~~at least a portion of~~ the metadata at a storage agent; and
accessing a storage device for the data file with the metadata
according to a volume management scheme; and
communicating ~~updated~~ the metadata to [[a]]the storage server and
exclusively storing ~~at least a portion of the~~ updated metadata in [[a]]the
centralized metadata database ~~on the storage server~~.

20. (Original) The computer readable storage medium of claim 19, wherein the method further comprises the managing data access by the storage agent to a storage device.

21. (Original) The computer readable storage medium of claim 19, wherein the method further comprises communicating the file data to the storage server in response to a data access failure.

22. (Currently Amended) The computer readable storage medium of claim 19, wherein the method further comprises ~~communicating new metadata to the storage server in response to a data access operation and~~ updating the centralized metadata database with the updatednew metadata in response to receiving the updatednew metadata.

23. (Original) The computer readable storage medium of claim 19, wherein the method further comprises preempting use of a volume by a non-priority storage agent in response to a volume access request from a priority storage agent.

24. (Original) The computer readable storage medium of claim 19, wherein the metadata comprises one of a file data characteristic, a device characteristic, a media characteristic, a positioning indicator, and an append position indicator.

25. (Currently Amended) A method for data access management on a storage device connected to a storage area network, the method comprising:

receiving a data access request from a client, the data access request including metadata associated with file data corresponding to ~~[[a]]the~~ client;

communicating a volume attribute request to a storage server;
receiving the metadata from a centralized metadata database of the storage server;

processing ~~at least a portion of~~ the metadata at a storage agent; and
accessing a storage device for the data file with the metadata according to a volume management scheme; and

communicating updated~~the~~ metadata to a storage server and
exclusively storing ~~at least a portion of the~~ updated metadata in ~~[[a]]the~~ centralized metadata database ~~on the storage server~~.

26. (Original) The method of claim 25, further comprising managing the data access by the storage agent to a storage device.

27. (Original) The method of claim 25, further comprising communicating the file data to the storage server in response to a data access failure.

28. (Currently Amended) The method of claim 25, further comprising ~~communicating new metadata to the storage server in response to a data access operation and~~ updating the centralized metadata database with the updated~~new~~ metadata in response to receiving the updated~~new~~ metadata.

29. (Currently Amended) An apparatus for data access management on a storage device connected to a storage area network, the apparatus comprising:

means for receiving a data access request from a client, the data access request including metadata associated with file data corresponding to a client;

~~means for processing at least a portion of the metadata at a storage agent and accessing a storage device according to a volume management scheme; and~~

~~means for communicating the metadata to a storage server and exclusively storing at least a portion of the metadata in a centralized metadata database on the storage server[.]]; and~~

means for communicating a volume attribute request to the storage server, receiving the metadata from the centralized metadata database of the storage server, accessing the file data with the metadata, and sending updated metadata to the storage server.